Compliance sheet — star-utm

Everything a supplier qualification, a legal review or an export check usually asks about star-utm 0.1.0, in one document.

1. Identity

Document	STAR-PKG-STAR-UTM-EN · v2.3 · 2026-11-14
Package	star-utm
Version	0.1.0
Capability	star.geodesy.utm
Maturity	Released & Verified (RELEASED)
Python	>=3.9
Source commit	dc09f61d
Source	https://github.com/Andrea07072000/S.T.A.R.-/tree/main/packages/star_utm

2. Licence and obligations

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3. What it needs at run time

Nothing beyond the Python standard library: it works offline.

4. Integrity

SHA-256 fingerprints of the files published on this website. Check a downloaded file with:

```
python -c "import
hashlib,sys;print(hashlib.sha256(open(sys.argv[1],'rb').read()).hexdigest())" star_utm-0.1.0-
py3-none-any.whl
```

FILE	SHA-256
star_utm-0.1.0-py3-none-any.whl	28a8a79d06cd81fa29100186f27eb2e7b38ce613e1a1ea4b04b2c29f0e322b21
star_utm.py	16cf6380d92088abb7f06f108e086cef9fc783a63ad1e5e534105fcb4c0bc346
star_utm-0.1.0-source.zip	4ba9615eaebdf55ef4d0839c70acc8b675d79c6545eaccc0101f5269f170944f

5. What it does, and its limits

Transverse Mercator and UTM coordinates, forward and inverse, by Krueger's series; within 2e-7 m of PROJ and PyGeodesy on 600 points in their zone and 2.5e-7 m of PROJ up to 12 deg from the central meridian; reproduces Snyder's published example and refuses out-of-range input.

The Norway and Svalbard exceptions of the MGRS grid are NOT applied: `utm_zone` is the plain 6-degree rule (one of 600 random points fell in an exception zone and was compared in the other library's zone). No MGRS letters, no UPS for the polar caps, no datum transformation. Beyond 12 deg from the central meridian the functions refuse: the accuracy there was not measured. The accuracy stated is agreement with two libraries, not with a survey.

- `tm_forward` and `tm_inverse`: Krueger's series to n^4 (Karney 2011) about a central meridian, with scale k0 and no false origin, for any ellipsoid with flattening up to 0.1. Reproduces Snyder's numerical example (USGS PP 1395, p. 269) to the printed 0.1 m.
- `utm_zone`, `utm_forward`, `utm_inverse`: WGS-84, k0 = 0.9996, false easting 500000 m, false northing 10000000 m in the South, 6-degree zones from 180 W; a zone can be forced.
- Measured: 600 points in their zone within 2e-7 m (forward) and 6e-8 m (inverse) of PROJ and PyGeodesy; 300 points 3 to 12 deg from the central meridian within 2.5e-7 m of PROJ.
- Every function returns its result or raises `ValueError`: non-numeric, boolean, NaN or infinite input, latitude outside [-90, 90] (UTM: [-80, 84]), longitude outside [-180, 180], a point more than 12 deg from the central meridian, an ellipsoid or scale outside the stated ranges, a zone not an integer in 1…60, a hemisphere other than 'N' or 'S', coordinates beyond the pole of the projection.

6. Export, use and certification

The package is published and freely available. That usually takes software out of export-control lists, but not every use of it: read the page on space activities and export control before using it in a controlled programme. It is not certified or qualified for flight; the evidence describes what was tested and how.

7. Citation and bill of materials

```
@software{cavazzini_star_utm_0_1_0,
  author  = {Cavazzini, Andrea},
  title   = {{star-utm}: Transverse Mercator and UTM coordinates},
  version = {0.1.0},
  year    = {2026},
  url     = {https://andrea07072000.github.io/S.T.A.R.-/software/star_utm/},
  note    = {Apache-2.0. Source: https://github.com/Andrea07072000/S.T.A.R.-, commit dc09f61d}
}
```

CITATION.cff · BibTeX · SBOM CycloneDX 1.5 · SBOM SPDX 2.3

8. Warranty and liability

Provided "as is", without warranties or conditions of any kind (Apache License 2.0, sections 7 and 8), to the extent the law allows. This never excludes liability that the law does not allow to exclude.

Related: space activities and export control · acceptable use · evidence and limits · licence texts